

**ABSTRACT OF THE DISCLOSURE**

A control system (58) for controlling the extent to which a valve (50) selectively by-passes exhaust flow around one of two turbines (18T, 20T) in an engine exhaust system (14). A desired set-point (TCBC\_DES) and the actual set-point of operation of the valve are used to develop a set-point error for closed-loop control of the actual set-point. A data value for closed-loop gain is selected from a schedule (164, 166) based on engine speed and fueling. The selected data value of closed-loop gain and the set-point error data value are used to create a data value for a closed-loop output (TCBC\_DTY\_PIF) that is used to create a data value for a final output for forcing the actual set-point to the desired set-point.